

REMARKS

This is intended as a full and complete response to the Office Action dated October 31, 2006, having a shortened statutory period for response set to expire on January 31, 2007. Please reconsider the claims pending in the application for reasons discussed below. No new matter has been added by amendments made herein.

Claim Rejections - 35 U.S.C. § 101

Claims 1-44 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 2-10, 12-16, 20-28, and 30-34 are rejected because they contain the deficiencies of claims 1, 11, 19, and 29 respectively.

Claims 20-28, 30-34, and 37-43 are rejected because they contain the deficiencies of claims 19, 29, and 36 respectively.

Claims 37-43 are rejected because they contain the deficiencies of claim 36.

Respectfully, Applicants traverse this rejection.

The Examiner states that the claimed invention is non-statutory subject matter because the presented claims are "simply abstract ideas" that do not produce a "useful, concrete, and tangible result." Applicants respectfully submit that the Examiner has not provided any analysis for his conclusion that the claimed invention fails to meet this test. Thus, Applicants are unclear as to which requirement(s) the Examiner believes the claimed invention fails to meet (i.e., not useful, not concrete, or not tangible).

Further, Applicants submit that the claimed invention meets the requirement of a "useful, concrete, and tangible result" as set forth in the Manual of Patent Examining Procedure (MPEP), Section 2106. Specifically, each independent claim of the present invention includes at least one step which results in useful, concrete, and tangible information. For example, present claim 1 includes the step of "generating logical relationships abstractly describing the determined corresponding relationships." Once generated, the logical relationships are accessible and may be used, for example, to construct a database abstraction model of a medical database.

Nevertheless, in an effort to facilitate prosecution, Applicants have amended the independent claims 1, 11, 17, 18, 19, 29, 35, and 36 to include one or more limitations relating the recited function to hardware of a computer, thereby interrelating the functions with a computer and also transforming an article (e.g., computer readable media or a processor). The claims are therefore statutory under 35 U.S.C. 101. . See MPEP § 2106, Section IV.C.2(1) and § 2106.01.

For the foregoing reasons, Applicants believe that claims 1-44 are directed to statutory subject matter and, therefore, respectfully request that this rejection be withdrawn.

Claim Rejections - 35 U.S.C. § 112

Claims 1, 11, 19, and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Respectfully, Applicants traverse this rejection.

The Examiner states:

Claims 1, 11, 19, and 29 recite the limitation "the relationships" on page 38, line 8, page 39, line 25, page 42, line 3, and page 43, line 25, respectively. There is insufficient antecedent basis for this limitation in the claims. It is unclear as to which relationship is being referenced and therefore examiner requests applicant to clarify which relationship is being referenced.

Applicants submit that the limitation "the relationships" of claims 1, 11, 19, and 29 is preceded by the word "relationships" in the preamble of each claim. For example, the preamble of claim 1 states in part: "A computer-implemented method of logically representing relationships between data elements..."

For the foregoing reasons, Applicants believe that claims 1, 11, 19, and 29 particularly point out and distinctly claim the subject matter and, therefore, respectfully request that this rejection be withdrawn.

Claim Rejections - 35 U.S.C. § 102

Claims 1-3, 5-7, 9-12, 14-16, 18-21, 23-25, 27-30, 32-34, 36-38, 40-42, and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by *Depledge et al.* (U.S. 5,899,988) (hereinafter "*Depledge*").

Applicants respectfully traverse this rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

In this case, *Depledge* does not disclose "each and every element as set forth in the claim". For example, *Depledge* does not disclose a method of logically representing relationships between data elements that includes the act of "providing a logical representation of the data, the logical representation abstractly describing a second physical representation of the data, wherein the second physical representation of the data is generated from the first physical representation of the data," as recited in claim 1. Independent claim 11 includes a similar limitation.

Regarding this element of claim 1, the Examiner states "the logical representation ('1' or '0' in 206, Fig. 2A) abstractly describing a second physical representation of the data (200, Fig. 2A)." *Office Action*, p.6. In this statement, the Examiner asserts that the bits (i.e., 1 or 0) of item 206 teach a "logical representation" that abstractly describes "a second physical representation of the data," which is taught by item 200. However, the Applicants submit that item 206 is a component of item 200. See *Depledge*, column 2, lines 50-57. Therefore, the Examiner uses the same element (i.e., item 200) to teach both the "logical representation" and the "second physical representation," which are claimed as distinct elements. Accordingly, the Applicants respectfully submit that the rejection is defective and should be withdrawn.

Regarding the second element of claim 1, the Examiner asserts that:

Depledge further teaches on the basis of the relationships between the data elements (*Rows of data, Fig. 1*) defined according to the first physical representation of the data (100), determining corresponding relationships between corresponding data structures defined according to the second physical representation of the data (200) (see *Figs. 1 and 2A*; *Note that a logical relationship is determined based on the data elements located in the first physical relationship (100). The data structures in figures 1 and 2A are tables consisting of rows and columns. The data structure in Figure 2A is defined by the use of bits "1" and "0", which represent the relationship between, in this case, a customer # and a location.*). P. 6 of the Office Action.

Independent claims 11, 19, 29, and 35 are rejected on a similar basis. Here, the Examiner is arguing that the bitmapped index 200 of *Depledge* is a second physical representation of the data, and that the "bits" that comprise bitmapped index 200 "represent the relationship between ... a customer # and a location," which are data elements of table 100 (i.e., the first physical representation of the data). Applicants submit that, at best, *Depledge* teaches constructing a second physical representation (i.e., bitmapped index 200) from bits which indicate the presence of key values (i.e., "NORTH", "BUSINESS") in the data elements of the first physical representation (i.e., the rows and fields of table 100). However, even assuming, *arguendo*, that the bits represent the "relationships between data elements of a first physical representation," *Depledge* does not teach determining the relationships between data structures of a second physical representation (i.e., between the bits that comprise bitmapped index 200) based on the relationships between data elements of a first physical representation (i.e., between the rows and fields of table 100).

Regarding the third element of claim 1, the Examiner asserts that:

Depledge further teaches generating logical relationships abstractly describing the determined corresponding relationships, each logical relationship defining a path between data structures of the second physical representation (200) (see *Figs. 1 and 2A*; *Note that a logical relationship is determined based on the data elements located in the first physical relationship (100). The data structures in figures 1 and 2A are tables consisting of rows and columns. The data structure in Figure 2A is defined by the use of bits "1" and "a", which represent the relationship between, in this case, a customer # and a location.*). P. 7 of the Office Action.

Independent claims 11, 19, 29, 35 and 44 are rejected on a similar basis. Here, the Examiner again argues that, in *Depledge*, the bits in bitmapped index 200 (i.e., the data structures of the second physical representation) represent the relationships between data elements of table 100 (i.e., the first physical representation of the data). However, the Applicants respectfully submit that the analogy fails to include the recited “path.” That is, the cited portions of *Depledge* (as well as *Depledge* generally) do not describe a “path” between the bits that comprise bitmapped index 200 (i.e., a path between data structures of the second physical representation). In fact, such a path between bits makes no sense in the context of *Depledge*. Thus, *Depledge* does not teach the element of generating logical relationships defining paths between data structures of the second physical representation, as recited in claim 1.

The Examiner rejects independent claim 18, stating in Office Action, p. 11:

Depledge further teaches transforming the abstract query into an executable query capable of being executed against the physical data (see Fig. 1 and 2A and column 3, lines 22-44; Note that once the location was changed, the values were then changed in the physical data using an executable query which flipped the bits representing the new changed values.); wherein the transforming is done using the data abstraction model and wherein the data abstraction model defines a specific path for traversing the data structures containing the physical data to reach the one or more result fields (see Fig. 3 and column 3, lines 22-44; Note that a bitmap index such as the one showed in Fig 3 (302) is used to map each bit for a given location to the physical data (shown in Fig. 1). The result index (320) represents the bitmap of the physical data as a result of the query terms portrayed in Fig. 3 (i.e TYPE = 'BUSINESS' and LOCATION = 'EAST' or LOCATION = 'SOUTH').).

Independent claim 36 is rejected on a similar basis. Here, the Examiner asserts that the bitmapped tables of *Depledge* (e.g., items 200 and 300) teach the recited element of a data abstraction model that “defines a specific path for traversing the data structures containing the physical data to reach the one or more result fields.” Applicants respectfully argue that the bits that comprise the bitmapped tables merely indicate whether a specific value is stored in a record and field of a physical table (i.e., table 100). Further, the bitmapped tables contain no information of any tables other than the

physical table. Thus, the bitmapped tables cannot describe a "specific path" across data structures to reach result fields, as recited in claim 18.

For the foregoing reasons, applicants respectfully submit that *Depledge* does not teach "each and every element" of the recited claim. Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

Claim Rejections - 35 U.S.C. § 103

Claims 4, 8, 13, 17, 22, 26, 31, 35, 39, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Depledge* in view of *Murthy et al.* (U.S. 2004/0220927 A1).

Applicants respectfully traverse this rejection.

In rejecting these claims, the Examiner relies on *Depledge* as applied to the claims discussed above. Therefore, for the reasons provided above, Applicants respectfully submit that the rejection is obviated. Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted, and
Signed pursuant to 37 CFR 1.4,

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